



PC Disassembly Guide

Technical Manual

Exercise 1 – PC Disassembly

Instructions:

Study the content carefully before attempting the questions listed below. Consider using other information sources as well. Periodicals, reference materials, and the Internet are great resources to find the answers to the technical problems you're going to face when servicing computers.

Name:	
Period:	
Date:	

Speaking of resources... Let's save some of our natural resources. Rather than printing out the entire lesson, print out only the worksheet. Study the lesson on-screen and then record your answers on this worksheet. When you're finished, return the worksheet to your supervisor for evaluation. Be sure to complete this assignment before moving onto the next.

Research Resources:

Company	Web Site	Description
In Win	http://www.in-win.com/tw	Computer Case Manufacturer
PC World	http://www.pcworld.com	Build Your Own PC
Intel	http://www.intel.com	Build Your Own PC

Questions:

1. ✓ Research and develop a detailed definition for each of the following terms. Many words have multiple definitions... Some of which may have nothing to do with the field of Computer Service and Support. Make sure your definition falls within the context of this lesson. Refer to the list of Research Resources and Required Materials as well as other materials you feel are appropriate. Write your definitions on the reverse side of this worksheet or a separate piece of paper with each definition being two sentences or more.

- | | | |
|------------------------|------------------------------|----------------------------------|
| ✓ Chassis | ✓ Parts Box | ✓ Static Safe Wrist Strap |
| ✓ Data Cable | ✓ Power Connector | ✓ Static Safe Mat |
| ✓ Connector Key | ✓ Interface Card Slot | ✓ Static Safe Bag |

2. ✓ What safety precautions should you take before opening the computer chassis?
3. ✓ All disk drives need both a _____ and _____ connection to operate.
4. ✓ What part or feature of a data connector prevents someone from plugging it in backwards.
5. ✓ What pin number does the colored stripe on a data cable indicate?
6. ✓ What size drive bay does a CDROM drive require for installation?
7. ✓ What precautions should you take before removing the mainboard, memory modules, or processor?
8. ✓ What's the name of the cable that leads from the CDROM drive to the sound card?
9. ✓ Regarding the floppy disk drive data cable. How do you determine which end of the cable gets connected to the drive?



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Exercise 2 – Disassembly and Reassembly

Exercise Objective:

This exercise will show you how to properly disassembly and reassemble a personal computer.

Name:	
Period:	
Date:	

Discussion of Fundamentals:

You'll need to refer to the CPU Assembly Guide and the PC Assembly Videos while working through this exercise.

You'll take apart and then reassemble a personal computer piece-by-piece. In industry, this is often called remove and replace or R & R. It's important to keep track of all the bits-and-pieces as you remove them. It helps to lay the screws out in a parts box in the same order they're removed. That way you can work backwards through the parts putting them back in the right places.

Procedure:

Before you start disassembling the PC trainer, you'll need to verify that the computer is complete and in working condition. After all – One of the best ways to determine if you've put a PC back together right is if the thing still works when you're done. So... Before you open the case, connect the computer to a monitor, keyboard, and mouse and boot it up. Ask your instructor for assistance if you need it.

Instructions:

Regardless of your experience working with PCs, you're still a technician in training. Your work must be checked before you apply power to your trainer every time. Otherwise, you run the risk of destroying the very PC you're learning how to service. While you're completing this exercise, you MUST follow the checklist to the letter... including the steps that require your instructor to check your work.

Required Materials:

Qty	Part Description	Qty	Part Description
1	Assembled PC Trainer	1	CPU Assembly Guide
1	PC Technician Toolkit	1	Parts Box

Complete each of the steps in this exercise using the following procedure:

1. Assess your own work by placing a ✓ by each correctly completed step.
2. Correct all un-checked steps before consulting your supervisor.
3. Your supervisor will assess your work by placing a ✓ by each step they determine is correctly done.
4. All items not checked by the supervisor must be corrected by the student and then reevaluated.

Step	Description	Assessment	
		Student	Supervisor
A	Chassis Cover R & R		
1	Open a job on the Job Control Log and assign it a job control number.		
2	Open a Work Order and complete sections A and B as appropriate. Open and entry in section C – History.		
3	Fill out an Equipment ID tag and attach it to the computer trainer.		
4	Turn the computer off and disconnect the power, keyboard, mouse, and monitor connections from the PC.		
5	Remove all rings, watches, and jewelry before opening the computer case.		
6	Remove any screws holding the chassis cover in place. Set the screws aside in a parts box.		
7	Remove (open) the chassis cover.		
8	Supervisor Check – Does the technician have a valid Work Order? Is the Job Control Log properly filled out? Has the Equipment ID Tag been properly completed and secured to the trainer? Has the technician removed all rings, watches, and jewelry? Is the chassis open? Have the mounting screws been placed in the parts box?		
9	Replace (close) the chassis cover.		
10	Replace any chassis cover mounting screws.		
11	Test the computer for proper operation.		
12	Supervisor Check – Has the cover been properly replaced and secured? Does the computer operated correctly?		

Step	Description	Assessment	
		Student	Supervisor
B	Power Supply R & R		
1	Remove (open) the chassis cover setting any screws aside in a parts box.		
2	Disconnect the power connections to the drives and mainboard.		
3	Remove the screws securing the power supply to the chassis setting the screws aside in a parts box using a separate compartment.		
4	Remove the power supply from the chassis.		
5	Supervisor Check – Is the power supply completely removed from the computer chassis? Are the cover and power supply screws separately stored in the parts box?		
6	Replace the power supply securing it in place with the mounting screws.		
7	Reconnect the power supply to all disk drives and the mainboard.		
8	Test the computer for proper operation.		
9	Supervisor Check – Has the power supply been properly reinstalled in the computer chassis? Have power supply connections been made to the mainboard and all disk drives? Does the computer work properly?		
10	Replace and secure the chassis cover.		

C CDROM Drive R & R		Student	Supervisor
1	Remove (open) the chassis cover setting any screws aside in a parts box.		
2	Disconnect the power connection from the CDROM drive.		
3	Disconnect the data cable from the CDROM drive.		
4	Remove the screws or mounting clamps securing the CDROM drive to the chassis setting the screws aside in a separate compartment in your parts box.		
5	Slide the CDROM out of the computer chassis and set aside.		
6	Supervisor Check – Has the CDROM been completely removed from the computer chassis? Are the cover and CDROM mounting screws separately stored in the parts box?		
7	Replace the CDROM drive securing it in place.		
8	Reconnect the CDROM data and power cables observing polarity.		
9	Test the CDROM drive for proper operation.		
10	Supervisor Check – Has the CDROM been properly reinstalled in the computer chassis? Does the CDROM operate properly?		
11	Replace and secure the chassis cover.		

D Floppy Drive R & R		Student	Supervisor
1	Remove (open) the chassis cover setting any screws aside in a parts box.		
2	Disconnect the power connection from the floppy disk drive.		
3	Disconnect the data cable from the floppy disk drive.		
4	Remove the screws or mounting clamps securing the floppy disk drive to the chassis setting the screws aside in a separate compartment in your parts box.		
5	Slide the floppy disk drive out of the computer chassis.		
6	Supervisor Check – Has the floppy disk drive been completely removed from the computer chassis? Have the cover and floppy disk mounting screws been properly stored in the parts box?		
7	Replace the floppy disk drive securing it in place.		
8	Reconnect the floppy disk drive data and power cables observing polarity.		
9	Test the floppy disk drive for proper operation.		
10	Supervisor Check – Has the floppy disk drive been properly reinstalled in the computer chassis? Does the floppy disk drive operate correctly?		
11	Replace and secure the chassis cover.		

E Hard Disk Drive R & R		Student	Supervisor
1	Remove (open) the chassis cover setting any screws aside in a parts box.		
2	Disconnect the power connection from the hard disk drive.		
3	Disconnect the data cable from the hard disk drive.		
4	Remove the screws or mounting clamps securing the hard disk drive to the chassis setting the screws aside in a separate compartment in your parts box.		
5	Slide the hard disk drive out of the computer chassis.		
6	Supervisor Check – Has the hard disk drive been completely removed from the computer chassis? Are the mounting screws for the drive and cover stored in separate compartments in the parts box?		
7	Replace the hard disk drive securing it in place.		
8	Reconnect the hard disk drive data and power cables observing polarity.		
9	Test the hard disk drive for proper operation.		
10	Supervisor Check – Has the hard disk drive been properly reinstalled in the computer chassis? Does the hard disk drive operate correctly?		
11	Replace and secure the chassis cover.		

F Interface Boards R & R		Student	Supervisor
1	Remove (open) the chassis cover setting any screws aside in a parts box.		
2	Setup a grounded static safe mat and put on a grounded static wrist strap.		
3	Remove all interface cards that are plugged into the mainboard and set aside any screws in your parts box.		
4	Record the location of the video, sound, and network card slots on the work order.		
5	Place each card in a static safe bag as you remove them.		
6	Supervisor Check – Is the technician using a static safe wrist strap and static safe mat? Have all the interface cards been removed from the computer chassis? Have they been placed in static safe bags or on a static safe surface? Does the work order show which card goes in which slot on the mainboard? Have the mounting screws been properly stored in the parts box?		
7	Replace the interface cards in the same slots.		
8	Test the PC and Interface Cards for proper operation.		
9	Supervisor Check – Have all the interface cards been properly reinstalled in the computer chassis and in the correct interface slots. Are the cards secured with the correct mounting screws? Do the interface cards operate properly after reassembly?		
10	Replace and secure the chassis cover.		

G Motherboard R & R		Student	Supervisor
1	Remove (open) the chassis cover setting any screws aside in a parts box.		
2	Setup a grounded static safe mat and put on a grounded static wrist strap.		
3	Disconnect the power connector(s), CDROM audio, and drive data cable connectors at the mainboard.		
4	Remove the power supply and interface cards if necessary. Place the interface cards in static safe bags or on a static safe surface.		
5	Remove the mainboard mounting screws that secure the mainboard to the chassis.		
6	Ease the mainboard out of the computer chassis. Place the mainboard in a static safe bag or on a static safe surface.		
7	Supervisor Check – Is the technician using a static safe mat and wrist strap? Has the mainboard been completely removed from the computer chassis? Have the interface cards and mainboard been placed in static safe bags or on a static safe mat? Have all the mounting screws been properly organized in a parts box?		
8	Replace the mainboard by reversing steps 6 through 3.		
9	Supervisor Check – Has the mainboard been properly installed in the computer chassis? Have the interface cards been properly reinstalled in the correct slots? Is the power supply, CDROM audio, and drive data cables correctly connected to the mainboard?		
10	Test the PC for proper operation.		
11	Supervisor Check – Does the PC operate correctly?		
12	Replace and secure the chassis cover.		

H Mainboard Components R & R		Student	Supervisor
1	Remove (open) the chassis cover setting any screws aside in a parts box.		
2	Setup a grounded static safe mat and put on a grounded static wrist strap.		
3	Remove the mainboard if necessary and place on a static safe surface.		
4	Eject all memory modules from the mainboard. Place the modules in a static safe bag or on a static safe surface.		
5	Locate the microprocessor on the mainboard and remove it. You may need to remove the heat sink and fan assembly with it. Place the processor in a static safe bag or static safe surface. Do not touch the thermal compound on the heat sink and processor.		
6	Locate the CMOS battery on the mainboard and make note of the battery's polarity on your Work Order. Remove the battery and place it in the parts box.		
7	Supervisor Check – Have the memory modules, processor, and CMOS battery been removed from the mainboard. Have the static sensitive devices been placed in static safe bags or on a static safe surface? Have the mounting screws and CMOS battery been organized in the parts box?		
8	You can reinstall these components by reversing steps 6 through 3.		

9	Replace the mainboard components by reversing steps 6 through 4.		
10	Reinstall the mainboard if necessary.		
11	Supervisor Check – Have the mainboard components been properly installed on the mainboard? Have the mainboard and interface cards been properly reinstalled an in the correct slots? Is the power supply and data cables correctly connected to the mainboard?		
12	Test the PC for proper operation.		
13	Supervisor Check – Does the PC operate correctly?		
14	Replace and secure the chassis cover.		

I PC Disassembly Job Control		Student	Supervisor
1	Complete sections B and C of the Work Order.		
2	Close out the Work Order on the Job Control Log.		
3	Remove the Equipment ID Tag from the trainer.		
4	Supervisor Check – Has the Work Order been properly filled out? Has the job been closed out on the Job Control Log? Has the Equipment ID Tag been removed from the trainer? Has the trainer been properly stored for the next technician to work on?		

Notes: